

**REMARKS**

The Final Office Action of July 27, 2004, has been received and reviewed.

Claims 1-26 are currently pending and under consideration in the above-referenced application. Of these, claims 1-15, 17-23, 25 and 26 stand rejected. Claims 16 and 24, which have been objected to for depending from rejected claims, recite allowable subject matter.

Reconsideration of the above-referenced application is respectfully requested.

**Rejection Under 35 U.S.C. § 102(b)**

Claims 1-4, 11-15, and 19-23 stand rejected under 35 U.S.C. § 102(b) for being directed to subject matter which is allegedly anticipated by U.S. Patent 5,647,785 to Jones et al. (hereinafter "Jones").

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single reference which qualifies as prior art under 35 U.S.C. § 102. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Jones describes field emission tips 15 that have sidewalls 44 that are oriented perpendicularly (illustrated as vertically) relative to a substrate 11. The lower portion of each field emission tip 15 and, thus, the sidewalls thereof, are surrounded by an insulative coating layer 44. *See, e.g.*, FIGs. 6I and 7B through 9; col. 8, lines 26-36. The optional coating layer is also oriented perpendicularly relative to the substrate 11. *See* FIGs. 6I and 7B through 9. While an upper surface of each coating layer 44 may be inclined and, thus, tapered, the incline extends *away from* an exposed end of the emission tip 15. *See id.*

The tops of the field emission tips 15 of Jones include inclined surfaces, which form the apices 42 thereof. *See, e.g.*, FIGs. 6I and 7B through 9.

Independent claim 1 is directed to a field emission tip that includes a structure comprising a central region, a tapered portion surrounding the central region, and an apex at an end of the central region. The central region of the structure of amended independent claim 1 includes a substantially vertical sidewall, while the tapered portion includes an inclined surface.

Jones does not expressly or inherently describe, or anticipate, a structure with a central region surrounded by a tapered portion that includes an inclined surface that extends *toward* an exposed region of the central region, as required by independent claim 1. Instead, the inclined surfaces of the coating layers 44 that surround the emission tips 15 of Jones extend *away from* the exposed ends of the emission tips 15.

Therefore, independent claim 1 recites subject matter which, under 35 U.S.C. § 102(b), is allowable over that described in Jones.

Claims 2-4 are each allowable, among other reasons, for depending either directly or indirectly from claim 1, which is allowable.

Independent claim 11 is drawn to a field emission array that includes a substrate, at least one substantially pointed tip protruding from the substrate, and at least one element surrounding at least a portion of the at least one substantially pointed tip. The at least one element has a surface that tapers toward an exposed end of the at least one substantially pointed tip.

Jones does not expressly or inherently describe a field emission array with at least one substantially pointed tip surrounded by at least one element with a surface that tapers toward an exposed end of the at least one substantially pointed tip. Rather, the coating layer 44 described in Jones includes an upper surface that is inclined in a direction that extends away from the emission tip 15.

Therefore, Jones does not anticipate each and every element of independent claim 11, as would be required to maintain the 35 U.S.C. § 102(b) rejection of independent claim 11.

Each of claims 12-15 is allowable, among other reasons, for depending either directly or indirectly from claim 11, which is allowable.

Independent claim 19 is directed to a field emission display that includes an anode display screen, a cathode spaced apart from the anode display screen, and a substantial vacuum between the anode display screen and the cathode. The cathode includes a substrate, at least one substantially pointed tip protruding from the substrate, at least one element surrounding the at least one substantially pointed tip, and a gate through which the at least one substantially pointed tip is

exposed. The at least one element that surrounds the substantially pointed tip includes a surface that tapers *toward* an exposed end of the at least one substantially pointed tip. In addition, a voltage source is associated with the anode display screen, the gate, and the cathode to provide a potential difference between the cathode and the gate, and between the cathode and the anode display screen.

Again, the description of Jones is limited to a coating layer 44 that surrounds each emission tip 15 thereof and that has an upper surface that is tapered such that it inclines *away from* the emission tip 15, not *toward* it, as would be required to anticipate independent claim 19.

Therefore, Jones does not anticipate each and every element of independent claim 19, as would be required to maintain the 35 U.S.C. § 102(b) rejection of independent claim 19.

Claims 20-23 are each allowable, among other reasons, for depending either directly or indirectly from claim 19, which is allowable.

For these reasons, it is respectfully requested that the 35 U.S.C. § 102(b) rejections of claims 1-4, 11-15, and 19-23 be withdrawn.

#### **Rejections Under 35 U.S.C. § 103(a)**

Claims 5-10, 17, 18, 25, and 26 are rejected under 35 U.S.C. § 103(a) for reciting subject matter which is purportedly unpatentable over the subject matter taught in Jones, in view of teachings from U.S. Patent 6,201,342 to Hobart et al. (hereinafter "Hobart").

The standard for establishing and maintaining a rejection under 35 U.S.C. § 103(a) is set forth in M.P.E.P. § 706.02(j), which provides:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior

art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claims 5-10, 17, 18, 25 and 26 stand rejected under 35 U.S.C. § 103(a) for reciting subject matter which is purportedly unpatentable over the teachings of Jones, in view of teachings from U.S. Patent 6,201,342 to Hobart et al. (hereinafter "Hobart").

Claims 5 and 6 are both allowable, among other reasons, for depending directly from claim 1, which is allowable.

Independent claim 7 recites a field emission tip that includes a central region including a periphery with a substantially vertical portion, a tapered portion that surrounds and includes an inclined surface that extends toward an exposed end of the central region, and an apex at the top of the central region.

It is respectfully submitted that neither Jones nor Hobart, taken either separately or together, teaches or suggests a field emission tip that with a tapered portion that surrounds a central region and that includes a surface that inclines *toward* an exposed end of the central region.

As Jones and Hobart do not teach or suggest each and every element of independent claim 7, it is respectfully submitted that the teachings of these references do not support a *prima facie* case of obviousness against the subject matter recited in independent claim 7.

Therefore, under 35 U.S.C. § 103(a), independent claim 7 recites subject matter which is allowable over that taught in Jones and Hobart.

Claims 8-10 are each allowable, among other reasons, for depending either directly or indirectly from claim 7, which is allowable.

Claim 18 is allowable, among other reasons, for depending directly from claim 11, which is allowable.

Claims 25 and 26 are both allowable, among other reasons, for depending directly from claim 19, which is allowable.

**Allowable Subject Matter**

The indication that claims 16 and 24 recite allowable subject matter is gratefully acknowledged. Neither of these claims has been amended to independent form, however, as the claims from which claims 16 and 24 depend are believed to be allowable.

**CONCLUSION**

It is respectfully submitted that each of claims 1-26 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



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